Poster Presentation (PF-27)

Incidence of Feline Dermatophytosis at Dramaga, Bogor in 2013-2018

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INTRODUCTION

Indonesia has a tropical climate and high humidity that give a high prevalence for fungal infections in cat skin such as Feline dermatophytosis (ringworm). Dermatophytosis is the most common fungal infection of cats and one of the most important infectious skin diseases in this species. It may be transmitted to other animal species and also contangious nature, zoonotic potential (Moriello, 2014). Feline dermatophytosis cases are caused by genera *Microsporum, Trichophyton,* and *Epidermophyton*. All of these agents produce proteolytic and keratolytic enzymes that enable them to utilize keratin as the sole source of nutrition after colonization of the dead, keratinized portion of epidermal tissue (mostly stratum corneum and hairs, sometimes nails) (Mattei et al., 2014). The aim of this study are to identified and evaluate the kind of fungal that can cause feline dermatofitosis in Dramaga in 2013 until 2018.

MATERIALS AND METHODS

This research conducted in Dramaga, Bogor in 2013 until 2018. The incident of Dermatophytosis is obtained from monthly report from skin scrapings cat that suspected with dermatophytosis.

This research used skin scrapings from a cat that suspected with dermatophytosis. The border of ringworm infected area was scraped with a scalpel until epidermis layers of the skin get peeled off. Identification was done with native test by adding KOH 10% to the skin scrapings in an object glass then observed using microscope 40 x10 magnification. Then, the skin scrapings cultivated in a Sabourand Dextrose Agar (SDA) and incubated within 7-14 days. Further identification was done by using cellotape added with *lactophenol cotton blue* (LPCB) then observed using microscope 10x magnification. The fungal from SDA then cultivated in Riddle's slide culture and incubated within 7 days. After 7 days incubation, identification process continued by adding LPCB to the fungal that grew in Riddle's slide culture on object glass then observed using microscope in 10 x and 40x magnification.

RESULT AND DISCUSSION

Dermatophytosis are the most frequent fungal infections of pets and play animal and human health due to their zoonotic potential caused by different species of *Microsporum* and *Trichophyton* (Moriello, 2014). The fungal species is identified based on morphology, the presence of hyphae, conidia and macroconidies. The results showed that the samples of skin scrapings isolation and identification cause of dermatophytosis in cats is the type of fungal *Microsporum canis*, *Microsporum gypseum*, and *Tricophyton rubrum* cause feline dermatophytosis in Dramaga in 2013 until 2018. Mattei et al., (2014) gives statement that *Microsporum canis*, along with *Microsporum gypseum* and *Trichophyton* are fungal species responsible for more than 95 % of all dermatophytosis cases in pets.

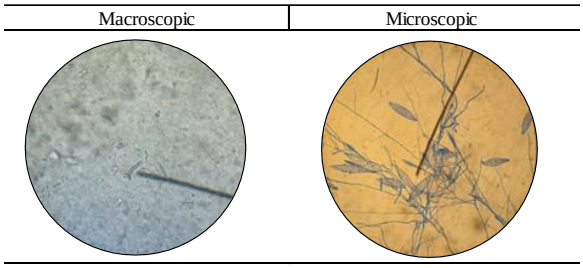

Figure 1. *Microsporum canis* culture, microscopic skin scrapping and microscopic observation in SDA (10 x).

Microsporum canis is a the most common cause of dermatophytosis that are frequently affects young cats and is more often observed in exotic and long haired cats than in domestic short haired cats (Moriello et al., 2017). Exposure via direct contact in cats is the most common and important route of transmission and presents the highest risk factor (Moriello, 2014). The results gives microscopic structure of *M. canis* (Figure 1)

macroconidies are characterized by the presence of spindle shaped, thick and rough walls, colony aspect are plane, velvety or cottony surface, white or yellowish color and brown or golden-yellow reverse. Microscopic structure of *M. canis* (Figure 1) in SDA and Riddle present that macroconidies are characterized by the presence of rough walls, moderately thick walls. Mattei et al (2014) *Microsporum canis* are fusiform, have thin, moderately thick to thick walls. Macroconidia are characterized by the presence of rough walls which may be asperulate, echinuate, or verrucose.

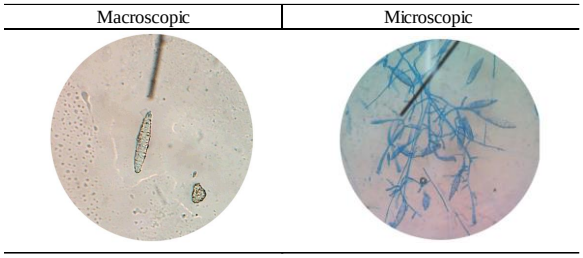

Figure 2. *Microsporum gypseum* culture, microscopic skin scrapping (40x) and microscopic observation in SDA (10 x).

Microsporum gypseum is a geophilic fungus that lives in the soil and is distributed throughout the world. Microscopic of the skin scrapping (Figure 2) present macroconidies, a flat colony surface with pigments yellow-brown color and in microscopic (Figure 2) present some microconidies, a number of macroconides thin wall without knob. Mihali et al (2011) microscopic morphology of *Microsporum gypseum* produces septate hyphae, macroconidies and microconidies. A yellow-brown pigment, often with a central darker brown spot, is usually produced on the reverse.

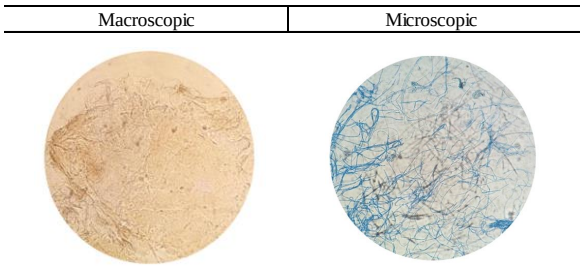

Figure 3. *Trichophyton rubrum* culture, microscopic skin scrapping and microscopic observation in SDA (10 x).

Skin scrapping of *Trichophyton rubrum* (Figure 3) which only present hyphae, yellowish-brown color with a slight fold that looked white like cotton with yellow to non-colored edges and verrucose topography. Microscopic observation on SDA and Ridddle method (Figure 3) results that *Trichophyton rubrum* have a smooth hyphae, this fungus forms many microconidies. The microconidies are small, thin-walled and oval shaped like teardrops. Microconidies are located on the short conidiophores. Macroconidies from *Trichophyton rubrum* is shaped like a pencil and consists of several cells. Mattei et al (2014) Microconidia usually more abundant than macroconidia, pyriform or clavate. Rosita (2008) *Trichophyton rubrum* is the most common species that cause dermatophytosis in Indonesia.

CONCLUSION

Dermatophytosis are the most common infectious skin diseases detected in small animal. Skin biopsy is helpful in the diagnosis of feline dermatophytosis. Based on this research it can be conclude that samples of skin scraping was infected by *Microsporum canis*, *Microsporum gypseum*, and *Tricophyton rubrum* in 2013 until 2018 in Dramaga.

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